

WHAT IS CLAIMED IS:

1. A method for timing recovery of a digital signal in a telecommunications receiver, comprising:

tracking a plurality of coefficients in a tracking buffer for timing drift,

centering the plurality of coefficients in the tracking buffer,

filtering, through an equalizer, the digital signal with the plurality of coefficients, and

updating the plurality of coefficients in the tracking buffer.

2. A method for timing recovery of a digital signal according to claim 1, wherein:

the step of tracking the plurality of coefficients further comprises,

summing a set of left coefficients,

summing a set of center coefficients,

summing a set of right coefficients,

comparing the set of left coefficients, the set of center coefficients, and the set of right coefficients to obtain a set with the greatest weighting; and

the step of centering the plurality of coefficients further comprises centering the plurality of coefficients about the set with the greatest weighting.

3. A method for timing recovery of a digital signal in a telecommunications receiver, comprising:

splitting the digital signal into an in-phase input signal and a quadrature input signal,

tracking a plurality of coefficients in a tracking buffer for timing drift, wherein the coefficients are in-phase coefficients,

centering the plurality of in-phase coefficients in the tracking buffer,

centering the plurality of quadrature coefficients in the tracking buffer,

filtering, through an in-phase equalizer, the in-phase signal with the plurality of in-phase coefficients,

filtering, through a quadrature equalizer, the quadrature signal with the plurality of quadrature coefficients,

updating the plurality of in-phase coefficients in the tracking buffer, and

updating the plurality of quadrature coefficients in the tracking buffer.

4. A method for timing recovery according to claim 3, further comprising:

tracking a plurality of coefficients in a tracking buffer for timing drift, wherein the coefficients are quadrature coefficients.

5. A timing recovery device for processing a digital signal, comprising:

an equalizer for processing said digital signal,

a filter buffer for storing a plurality of equalizer coefficients to be applied to said equalizer, and

a buffer manager for tracking the equalizer coefficients within the filter buffer, and for shifting the coefficients within the filter buffer such that the coefficients remain substantially centered within the filter buffer.

6. A timing recovery device according to claim 5, wherein the tracking buffer further comprises:

a data tracking buffer for storing a portion of said signal, and

a coefficient tracking buffer for storing said equalizer coefficients.

7. A timing recovery device according to claim 5, further comprising:

a data tracking buffer for pointing to said portion of said signal stored in said tracking buffer, and

a coefficient tracking buffer for pointing to said equalizer coefficients.

8. A timing recovery device for processing a digital signal having an in-phase portion and a quadrature portion, comprising:

an in-phase equalizer for processing said in-phase portion of said signal;

an in-phase tracking buffer for storing a plurality of in-phase equalizer coefficients to be applied to said in-phase equalizer;

a quadrature equalizer for processing said quadrature portion of said signal;

a quadrature tracking buffer for storing a plurality of quadrature equalizer coefficients to be applied to said quadrature equalizer; and

a buffer manager.

9. A timing recovery device according to claim 8, wherein:

the buffer manager is designed for tracking the in-phase equalizer coefficients within the in-phase tracking buffer, for shifting the in-phase coefficients within the in-phase tracking buffer such that the in-phase coefficients remain substantially centered within the in-phase tracking buffer, and for shifting

the quadrature coefficients within the quadrature tracking buffer such that the quadrature coefficients remain substantially centered within the quadrature tracking buffer.

10. A timing recovery device according to claim 8, wherein:  
the buffer manager is designed for tracking the quadrature equalizer coefficients within the quadrature tracking buffer, for shifting the in-phase coefficients within the in-phase tracking buffer such that the in-phase coefficients remain substantially centered within the in-phase tracking buffer, and for shifting the quadrature coefficients within the quadrature tracking buffer such that the quadrature coefficients remain substantially centered within the quadrature tracking buffer.

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